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FIVE NEW ELEMENTS PREDICTED USING 'SACRED GEOMETRY'!

In the following article Chris Illert predicts the existence of five new "magic" (super-heavy) elements, after discovering a link between platonic solid geometry and the "shape" of the atomic nucleus generated by the positions of the protons and neutrons.

BY CHRIS ILLERT, 1991

We may all have seen Johann Kepler's model of the solar system, in terms of nested Platonic Shells describing planetary orbits of differing radii, and if not can readily consult Lawlor's book on "Sacred Geometry". It is less well known that Buckminster Fuller had a Platonic Shell theory of super-stable, "magic", atomic nuclei

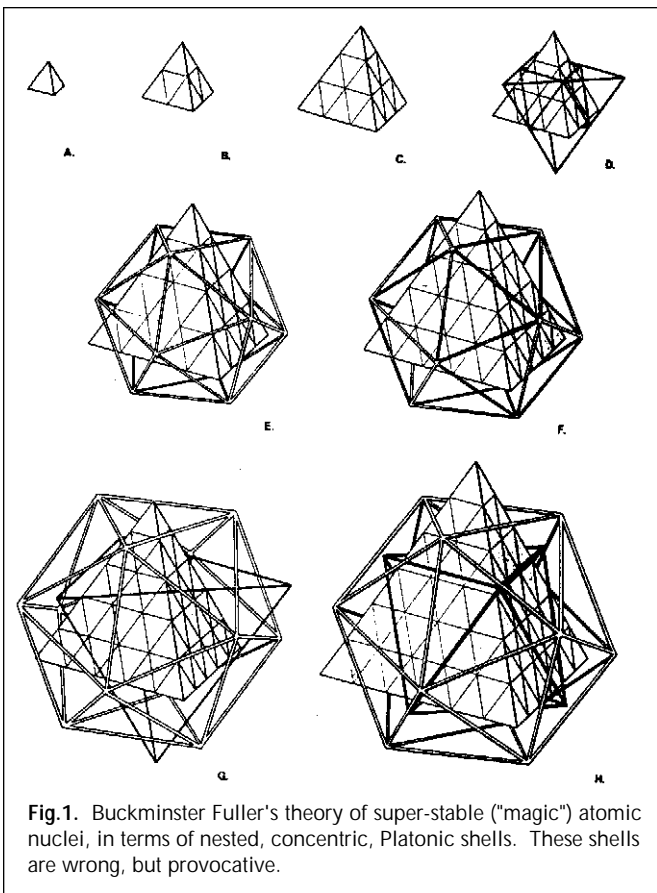


Fig.1. Buckminster Fuller's theory of super-stable ("magic") atomic nuclei, in terms of nested, concentric, Platonic shells. These shells are wrong, but provocative.

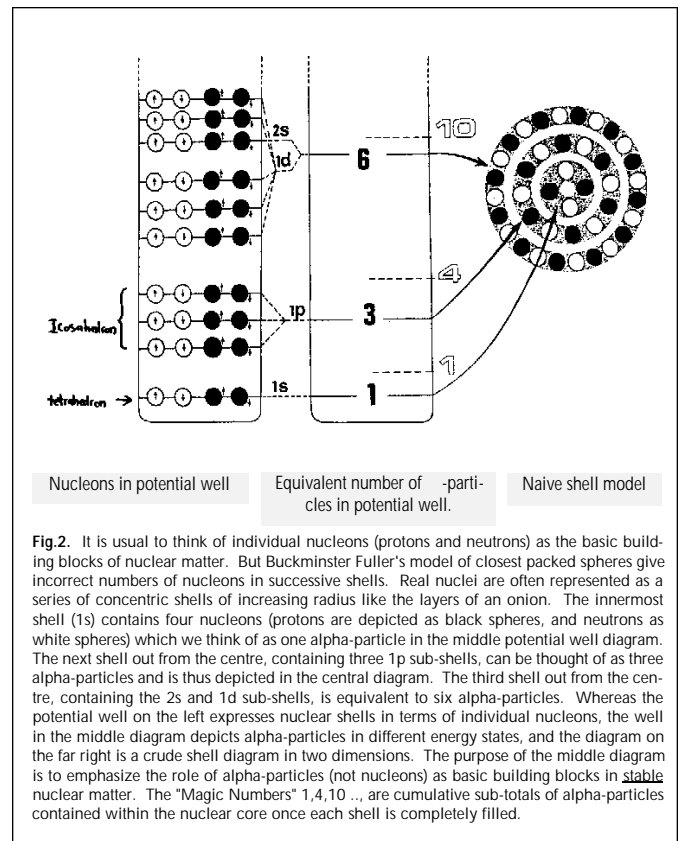


Fig.2. It is usual to think of individual nucleons (protons and neutrons) as the basic building blocks of nuclear matter. But Buckminster Fuller's model of closest packed spheres give incorrect numbers of nucleons in successive shells. Real nuclei are often represented as a series of concentric shells of increasing radius like the layers of an onion. The innermost shell (1s) contains four nucleons (protons are depicted as black spheres, and neutrons as white spheres) which we think of as one alpha-particle in the middle potential well diagram. The next shell out from the centre, containing three 1p sub-shells, can be thought of as three alpha-particles and is thus depicted in the central diagram. The third shell out from the centre, containing the 2s and 1d sub-shells, is equivalent to six alpha-particles. Whereas the potential well on the left expresses nuclear shells in terms of individual nucleons, the well in the middle diagram depicts alpha-particles in different energy states, and the diagram on the far right is a crude shell diagram in two dimensions. The purpose of the middle diagram is to emphasize the role of alpha-particles (not nucleons) as basic building blocks in stable nuclear matter. The "Magic Numbers" 1,4,10... are cumulative sub-totals of alpha-particles contained within the nuclear core once each shell is completely filled.

which he presented in his two books titled "Synergetics". His shells were wrong, as it happens, but the idea was correct - see Figure 1. If protons and neutrons are solid spheres trying to equally space themselves in a succession of concentric spherical shells, within the atomic nucleus, rather like the layers of an onion, then they must position themselves at the vertices of Platonic solids which nest inside each other. Quantum theory is irrelevant! This is a geometrical fact, to do with the packing of solid equal-sized spheres in shells, nothing Quantum about it!

At the other extreme, Quantum Theory sees the nucleus in terms of a "potential well" with discrete energy levels (respectively labelled 1s, 1p, 1d, 2s etc) each of which can be filled with two protons and two neutrons (see Figure 2).

But what is so special about two protons and two neutrons? Well, they can position themselves at the vertices of the simplest Platonic Solid, as in Figure 3, forming the first "magic" nucleus Helium (${}^4_2\text{He}$).

The 3 tetrahedra in the 1p level of Fig 2, actually exist as an icosahedral cage ("shell") containing a tetrahedral core in the next "magic" nucleus Oxygen (${}^{16}_8\text{O}$); see Figure 4.

If all the tetrahedra in the Oxygen nucleus were stacked into a 2-level Pythagorean Tetractular pile, the top one would be the core of

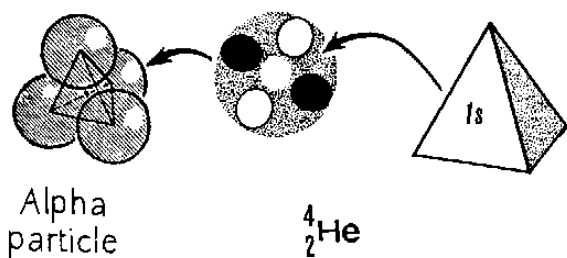


Fig.3. We represent the alpha-particle in several ways in this article. It is sometimes drawn as a ring (or "shell"), hollow in the centre, containing four nucleons. It is also useful to represent it as a three dimensional tetrahedron with a nucleon at each of its four corners. As the tetrahedron is hollow in its very centre, we can see why it makes sense to think of the alpha-particle as a shell rather than a spherical "core". The basic alpha-particle is also the 1s shell in the nuclear potential well of Fig.2, so we quite often simply draw a tetrahedron labelled 1s. It also corresponds to the "Magic Number" 1 because the 1s shell is filled by one alpha-particle.

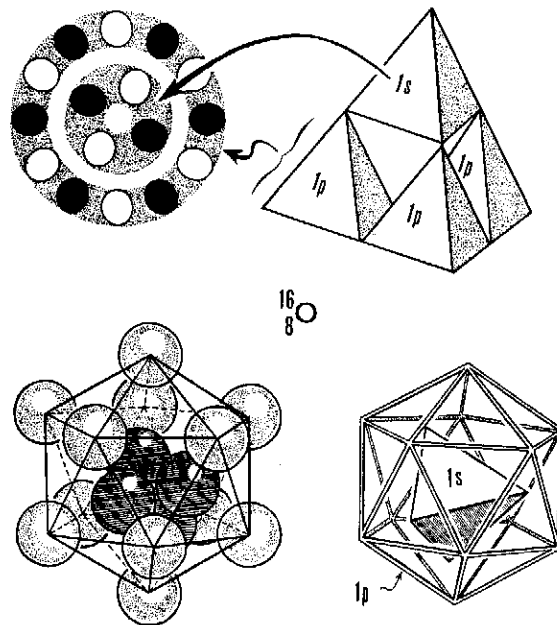


Fig.4. The $^{16}_8\text{O}$ nucleus is made from two filled shells. It has a core made from the 1s shell. Its next shell (made from three separate 1p subshells) is made from the three alpha-particles. Generally three tetrahedra, collectively with twelve vertices (nucleons), have no option but to form an icosahedral shell (also with twelve vertices): this is just basic conservation of nucleons! But also it has to do with the fact that the icosahedron has all vertices equally spaced and oriented with respect to each other on the surface of an equivalent sphere. If we were to assume that nucleons are mildly solid spheres which resist compression then this is also a necessary condition for nucleons in a spherical shell. Thus we can abstract the structure of the Oxygen nucleus completely away from the notion of individual nucleons, and instead represent its inner 1s core by a tetrahedron surrounded by an icosahedral shell.

the nucleus, whilst the 3 base tetrahedra would correspond to the next (icosahedral) shell out. (see Fig 4).

How real is this Platonic arithmetic and what does it mean? Well, a typical nuclear reaction involves Oxygen decaying to Carbon plus an alpha particle (ie a Helium nucleus). See Fig. 5.

Bucky Fuller envisioned his famous "Jitterbug" transformation, in which an icosahedron whose top and bottom twisted in opposite directions, transforms into a cube octahedron thereby opening up several square "windows" (facets) where only triangular ones existed before (Fig.6).

If this were to happen to the icosahedral shell round the Oxygen nucleus, then the tetrahedral "core" might escape through one of those square windows, explaining the Oxygen disintegration reaction cited above.

The coreless tetrahedral shell would "jitterbug" back to an icosahedron then shrink - as it now would have no core inside it, then two possible things could happen. Either it could blow apart - into

the 3 constituent tetrahedra - as in Fig 7 - thereby explaining another well known nuclear reaction ($^{12}_6\text{C} \rightarrow 3^4_2\text{He}$): or else it could settle down to the carbon nucleus' ground state which is a tetrahedral core surrounded by a cubical cage (made from the other two tetrahedra) - see Fig 2's first three energy levels.

All of this is explainable from Platonic, solid-geometry, principles without the need for quantum concepts at all!

Quantum philosophy is simply irrelevant to the geometry of what is actually happening in the real world at this level. Indeed we have used this "tetrahedral" arithmetic to predict the existence of five new "magic" chemical elements (Illertium, Danielium, Glasheenium, Fentonium, and Popeium) previously unknown to science. It is these new chemical elements which we feel, may explain the colossal (and previously inexplicable) energy output from Quasars. The easiest way to verify their existence is to use an orbiting X-Ray telescope to study certain special frequencies emanating from neutron stars and Quasars.

As theoreticians we've done our job, now it's up to the experimentalists and NASA!

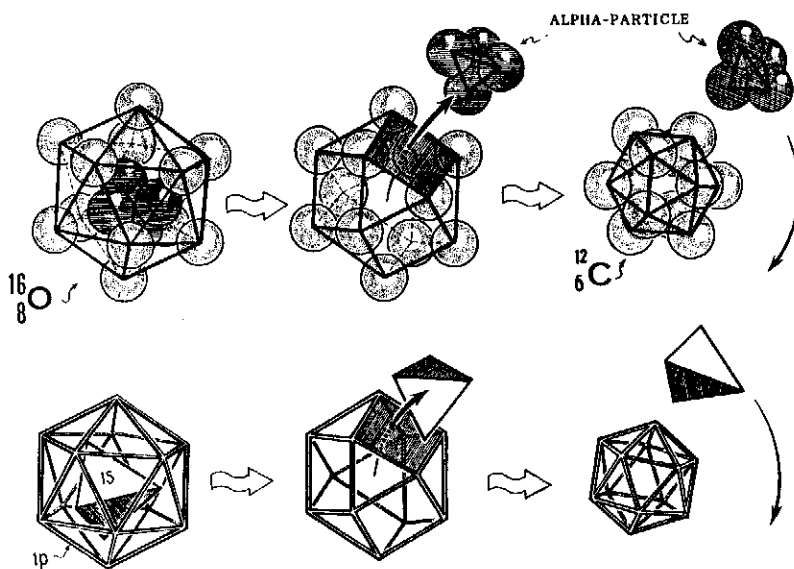
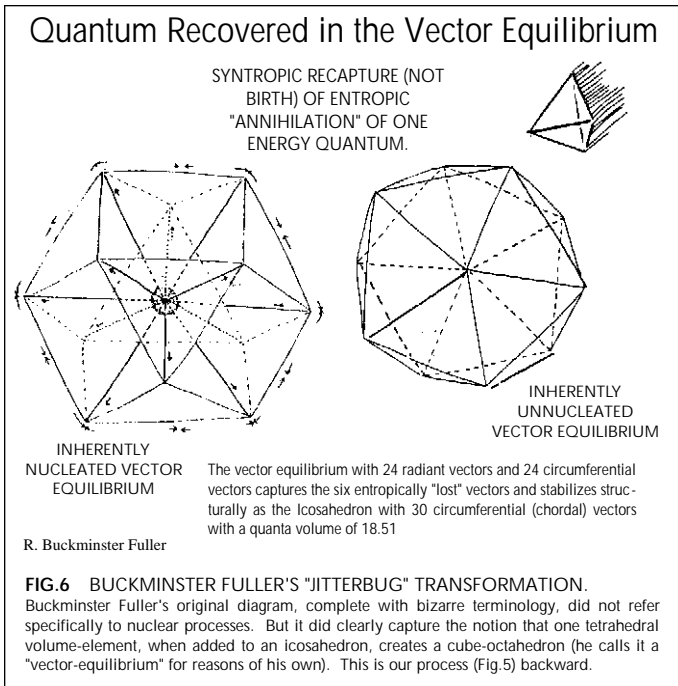


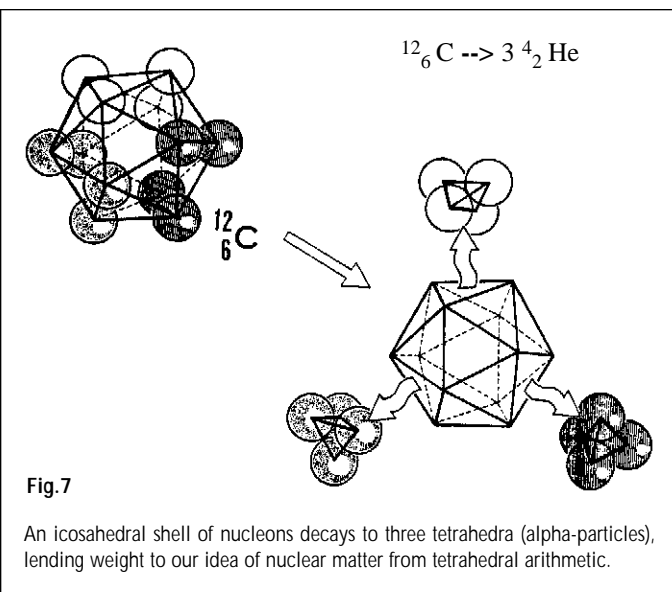
Fig.5. $^{16}_8\text{O} \rightarrow ^{12}_6\text{C} + ^4_2\text{He}$ The "birth" of a tetrahedron.



POSTSCRIPT:

An article appeared in New Scientist 31 August 1991, entitled "The Search for the missing elements" which would tend to indicate that these elements postulated by Chris Illert DO EXIST, but have not yet been "found" or "made".

Chris Illert is a former staff member of Wollongong University and leading theoretical physicist and mathematician. He has had numerous papers published in prestigious international science journals.



*** NEWS FLASH ***

Nexus is pleased to announce its support for a recently launched product in the field of fuel economy and efficiency.

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This has the result of reducing carbon monoxide and other pollutants, enables a better mileage per gallon, and gives your engine more "vroom" when you put your foot down.

The polarised molecules tend also to attract carbon which builds up inside the engine, a result of incomplete combustion, so it even aids in cleaning the engine exhaust system.

We at Nexus were so impressed with the test unit we purchased that we are helping to market the units.

This is one device I don't think you will find on sale in the service stations, so get them from Nexus while you can.